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ABSTRACT

It is argued that the direct output of a contrastive analysis should be a transfer grammar, a single set of rules which would serve at one and the same time for transferring from language A to language B and from B to A. It is shown that such rules can be formulated either as equations or in the form of matrices. The elements involved can either be specific phonological or morphological forms, or they can be labels for one or more forms. Using such labels has the advantage that one may deal with several different levels of abstraction simultaneously. (Author)

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TRANSFER GRAMMAR AS THE END PRODUCT OF CONTRASTIVE ANALYSIS

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It is argued that the direct output of a contrastive analysis should be a transfer grammar, a single set of rules which would serve at one and the same time for transferring from language A to language B and from B to A. It is shown that such rules can be formulated either as equations or in the form of matrices. The elements involved can either be specific phonological or morphological forms, or they can be labels for one or more forms. Using such labels has the advantage that one may deal with several different levels of abstraction simultaneously.

Most of the contrastive analyses that have been made in recent years have been done for purely pedagogical purposes. As a result, although some of the phonological studies have been fairly complete, the syntactic studies usually do not pretend to cover all the grammatical features of the languages involved. Their primary aim is to point out areas where the two languages are "most different", and a prior knowledge of the structures of the two languages is often assumed.

It is not my intention to deny the need for, or the helpfulness of, such studies. On the contrary, they can be of great service to the language teacher or the textbook writer; but they usually are not intended to be used as textbooks in language classes, and thus would be of little use to the average language student. Also, the approach is often strictly one-sided. That is, the study, for example, points out the problems an English speaker would have in learning German, but not vice versa. And obviously the two sets of problems would be quite different. Thus, the usefulness of such studies is somewhat limited in scope.

But more importantly, contrastive studies of the type just mentioned should be, although they usually have not been, based on a thorough and complete description of the structures of each language, and a systematic contrast of all aspects of both structures, whether similar or different. From a descriptive point of view, and in my opinion, from a pedagogical point of view as well, it is just as important to understand the ways in which the languages are similar as it is to know their differences. Only then can one see the full picture and have a true "contrastive analysis".

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One could perhaps draw an analogy from the history of the dictionary. Early dictionaries were merely lists of the "hard" words that one was apt not to know. Today, while such a list might be interesting or helpful in certain circumstances, we would not think of calling it a dictionary. We expect even a monolingual dictionary to be complete in every respect, and to tell us the meanings (and all the meanings) of even the commonest words. We would be quite appalled if we came across a dictionary today which left out, say, the word dog because, after all, everyone knows what a dog is. We expect the dictionary to present us with a complete picture of the lexicon of the language, and the fact that we already know some of the information it contains is beside the point. So it should be with contrastive analysis.

It is my contention that a true contrastive analysis should result in a so-called "transfer grammar", which consists of a set of specific rules for transferring from one language to the other, covering all aspects of the structures of the languages involved. More pedagogically oriented contrastive studies could then be based on the findings of the transfer grammar.

Zellig Harris, in his classic article, "Transfer Grammar",¹ suggested the possibility of constructing a set of instructions which, added to the grammar of language A, would yield the grammar of language B, and another set of instructions (not necessarily the reverse of the first) which, added to the grammar of language B, would yield the grammar of language A. While a number of the specific suggestions Harris makes appear to be impracticable, the basic principle remains valid. The contrastive analysis of two languages should result in such a set of instructions. In the time remaining I shall outline briefly my views on the shape a transfer grammar should take.

First, it has been my experience that one does not need to have two sets of transfer rules as Harris suggests, but that in fact one set, which can operate in either direction, is the most practical arrangement. This is true no matter whether one is operating on the phonological, syntactic, or semantic level. Thus, for example, Spanish has two verbs meaning "to be", ser and estar, which have specific semi-grammatical conditions of occurrence. If one were constructing rules for transfer from Spanish to English, one could simply say that both verbs transfer to the English verb to be. Going the other direction, one would have to say that to be transfers to estar under certain specified conditions, to ser under certain other conditions. But there is no need to have uni-directional rules. Rather, one can construct an equation, which in this case would be roughly as follows:

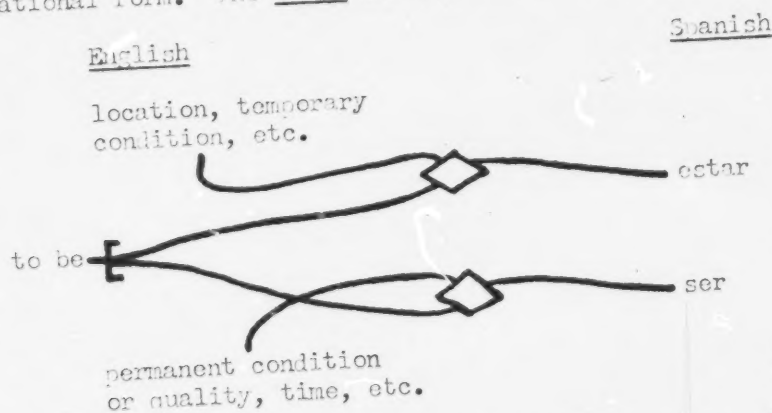
¹International Journal of American Linguistics 20.259-70 (1954).

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<u>English</u>	<u>Spanish</u>
<u>to be</u> , if indicating location, a temporary condition, etc. (with the <u>etc.</u> to be specified)	:: <u>estar</u>
<u>to be</u> , if indicating a permanent condition or quality, in an expression of time, etc. (with the <u>etc.</u> to be specified)	:: <u>ser</u>

The equation can be read with equal accuracy either from left to right or from right to left, and eliminates a great deal of needless repetition. All contrasts can be handled in this way, with conditions of transfer stated, when necessary, either in the right or the left half of the equation, or sometimes both. For a more complex set of equations, along with corresponding graphic representations, see the appendix.

The transfer rules can be represented graphically in either of two ways, either as relational networks or in the form of matrices. The relational network is a device created by Sydney M. Lamb and is used in stratificational grammar to represent the inter-relations among units and levels of linguistic structure in a single language. Stratificational grammar views language, not so much as a set of linguistic entities (phones, morphs, etc.) but as a set of relationships among these entities. Thus, a graphic representation in terms of relational networks is essential to the system. But this same relational network notation can be used in a transfer grammar to represent graphically the transfers which have been listed in equational form. The to be example could be represented as follows:



The diamonds allow the conditions for the occurrence of ser and estar to be specified. The fourth side of the diamond could be used if it were necessary to specify conditions for the transfer from Spanish to English. When one has a long list of complicated transfer rules,

such a representation could be especially useful in illustrating the complex relationships involved.

Matrices can also be used to advantage to represent rules graphically. Along the horizontal axis are represented the forms of the one language, while the vertical axis represents the forms of the other language. X's in the various boxes of the matrix indicate the possibility of transfer at that point, assuming that the conditions of occurrence have been satisfied. Thus to be would be quite simply represented as:

	Sp.	
Eng.	ser	estar
to be	X	X

It is important to note that the elements involved in the transfer rules, however they are represented, can be taken from any level of the linguistic structure. One can construct transfer rules for individual forms (phonological, morphological, and so on), as we have seen in the case of to be. But one can also transfer between labels for one or more forms, such as 1st-sg.-pres.-indic., or acc.-sg.-masc., where the label may cover a number of different morphological forms in both languages. The labels may or may not signify recognized morpheme classes. Using such labels has the advantage that one may deal with any number of different levels of abstraction. That is, for example, the use of the various tenses in language A may be contrasted with their use in language B, then the use of the various moods of each tense, then the various persons and/or numbers in each mood, and so on. At each level the transfer rules may be given in equation form and also represented graphically as networks or matrices. What particular levels are chosen to be represented in any one transfer grammar depends on the structures of the languages involved.

The importance of basing the transfer rules on a complete structural description of both languages should now be evident. If I have an acc.-sg.-masc. form in one language, and I want to reproduce this in another language, the transfer rules need only tell me that in the second language I need an acc.-sg.-masc. form; or perhaps they will tell me that I need an objective-sg. form, or perhaps just singular, depending on the structure of the language. But the transfer rules do not need to tell me the specific phonological shape of the form transferred to. This is derived from the structural description of the language itself and does not necessarily need to be incorporated into the transfer rules at all.

It is also possible that, on a certain level, something in one language does not transfer to the other language. This is not to say

that it is not translatable in one way or another, but rather that it does not transfer directly to an entity of the same sort and on the same level in the other language. Thus in transferring from languages which have a passive voice to those which do not, one must say that the passive simply does not transfer, even though the meaning of a passive sentence could, no doubt, be expressed in the target language in one way or another.

Even distributions of specific phonological or morphological forms can be represented in this way. If the differences of distribution are such, for example, that a morpheme class in language A transfers to either of two or more classes in language B, then the transfer rules specify which portions of the distribution of the class in language A correspond to the distributions of each of the two classes in language B. For example, in Literary Arabic the jussive mood is used both in negative commands and in conditional sentences. But Lebanese Arabic expresses a negative command with the subjunctive, while the perfect or the imperfect indicative is used in conditional sentences. The transfer rules, then, would include two rules for transfer from the Literary Arabic jussive—one for its use in negative commands, and another for its use in conditional sentences.²

While on the subject of morpheme classes, it should be noted that most languages do not have special morpheme classes to denote every structural distinction, but depend on the presence or absence of other morphemes or morpheme classes in an utterance to mark some distinctions. For example English has no "singular" morpheme for nouns, but the singular is expressed in most words by the absence of a plural morpheme. The transfer grammar must include rules for transfers involving such unmarked forms.

The rules in a transfer grammar do not follow any progression, but rather deal with numerous levels of the structure simultaneously. One could, in fact, use the equations and their graphic representations as handy look-ups for information on specific points of phonology, grammar, or semantics, as the need arises, and with no need for a prior knowledge of the rules that have gone before in the list. Thus, the output of a contrastive analysis, as I see it, is not a random list of the "most difficult" transfer points, nor a set of ordered mutation rules, but rather a hierarchically organized static structure which covers both languages in their entirety, and which may be entered or left at any point.

²The Arabic examples here and in the appendix are taken from Valerie Becker, A Transfer Grammar of the Verb Structures of Modern Literary Arabic and Lebanese Colloquial Arabic, a Yale University doctoral dissertation, 1964. A revised version is currently in press with Mouton, The Hague.

APPENDIX

This appendix illustrates more complex transfer rules, using verbs in Modern Literary Arabic and Lebanese Colloquial Arabic as examples. The principles demonstrated work equally well with more distantly related or unrelated languages. The following list gives the transfer rules for each tense, aspect, and mood in the two languages. The morphemic and phonemic make-up of these would be given in the structural sketch of each language. Transfers between specific morphemes and morpheme combinations would also be needed but are not shown here. Transfer rules are listed here for the active voice of Literary Arabic. Since Lebanese Arabic has no passive voice, the Literary passive "does not transfer".

<u>Literary</u>	<u>Lebanese</u>
<u>perfect active</u> if it does not express a wish, prayer, or curse	:: <u>perfect</u> if it does not express an action completed in the recent past
<u>perfect active</u> if it expresses a wish, prayer, or curse	:: <u>subjunctive</u> if it expresses a wish, prayer, or curse
<u>imperfect indicative active</u> if it does not express a durative action	:: <u>imperfect indicative</u> if it is not in a conditional sentence and is not emphatic
<u>imperfect indicative active</u> if it expresses a durative action in the past	:: <u>durative past</u>
<u>imperfect indicative active</u> if it expresses a durative action in the present	:: <u>durative present</u>
<u>subjunctive active</u>	:: <u>subjunctive</u> if it is in a subordinate clause or after another verb, and is not emphatic
<u>jussive active</u> if it is in a conditional sentence	:: <u>imperfect indicative or perfect</u> if it is in a conditional sentence ³
<u>jussive active</u> if it is a negative or indirect command	:: <u>subjunctive</u> if it is a negative or indirect command and is not emphatic
<u>energetic imperfect active</u> if it is not in a subordinate clause or a conditional sentence and does not express a negative or indirect command	:: <u>imperfect indicative</u> if it is emphatic
<u>energetic imperfect active</u> if	:: <u>subjunctive</u> if it is emphatic and

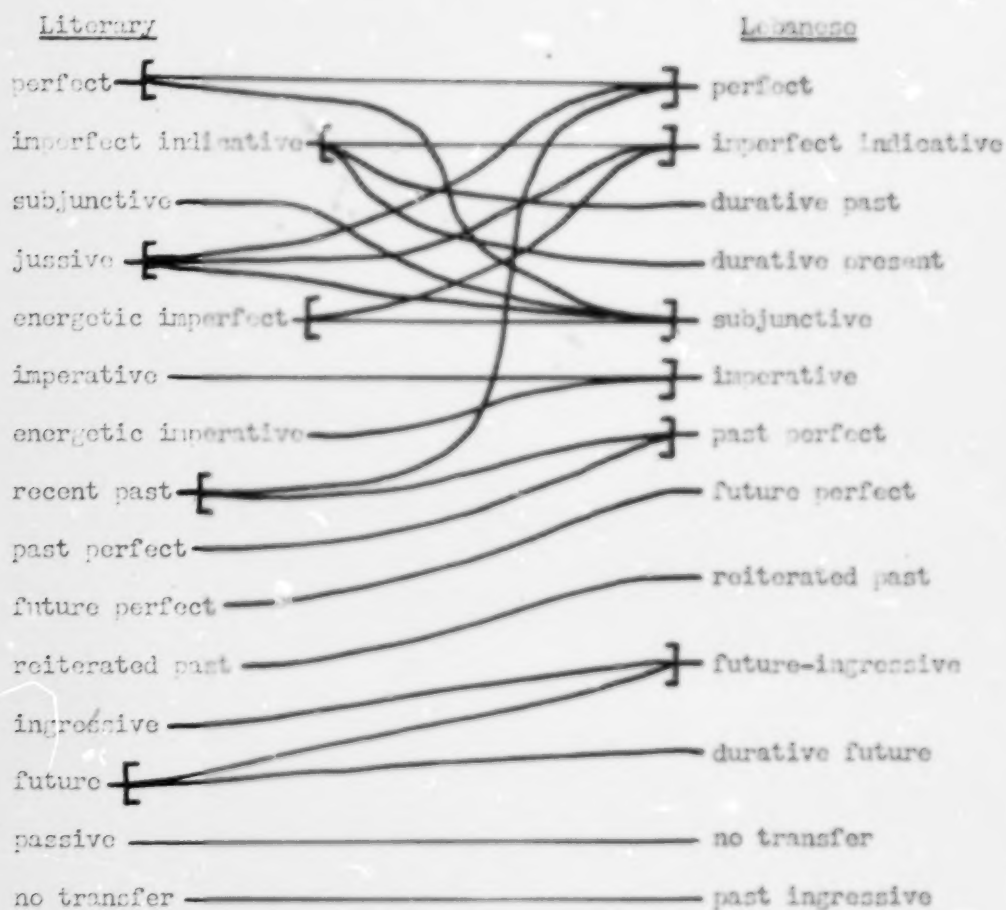
³The choice between imperfect indicative and perfect here involves syntactic and stylistic considerations which are too lengthy to detail here.

it is in a subordinate clause or a conditional sentence, or expresses a negative or indirect command	::	does not express a wish, prayer, or curse
<u>imperative</u>	::	<u>imperative</u> if it is not emphatic
<u>energetic imperative</u>	::	<u>imperative</u> if it is emphatic
<u>recent past active</u> if it does not express a past perfect	::	<u>perfect</u> if it expresses an action completed in the recent past
<u>recent past active</u> if it expresses a past perfect	::	<u>past perfect</u> if it expresses a recent past perfect
<u>past perfect active</u>	::	<u>past perfect</u> if it does not express a recent past perfect
<u>future perfect active</u>	::	<u>future perfect</u>
<u>reiterated past active</u>	::	<u>reiterated past</u>
<u>ingressive active</u>	::	<u>future-ingressive</u> if it expresses an ingressive
<u>future active</u> if it does not express a durative	::	<u>future-ingressive</u> if it expresses a future
<u>future active</u> if it expresses a durative	::	<u>durative future</u>
<u>passive</u>	::	no transfer
no transfer	::	<u>past ingressive</u>

Lebanese
Literary

perfect active
imperfect indicative act.
subjunctive active
jussive active
energetic imperfect act.
imperative
energetic imperative
recent past active
past perfect active
future perfect active
reiterated past active
ingressive active
future active
passive
no transfer

perfect	imperfect indicative	subjunctive	imperative	past perfect	future perfect	reiterated past	future-ingressive	durative past	durative present	durative future	no transfer	past ingressive
X		X										
	X							X	X			
		X										
X	X	X										
	X	X										
			X									
			X									
X				X								
				X								
					X							
						X						
							X					
								X				
									X			
										X		
											X	
												X



In the above relational network the diamonds, which allow the conditions of occurrence of each form to be tied in, have been omitted for ease of reading.

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